

AMENDMENTS TO THE ABSTRACT

Please amend the Abstract as follows:

[The invention is in] In the [filed] field of optical quantum information processing[.],
[This invention concerns the] manipulation of single photon qubits in frequency modes
employs[, and in particular] a frequency beamsplitter [and a frequency half-wave plate for use in
the frequency basis.] [The frequency beamsplitter comprises: An] employs an asymmetric two-
path interferometer, reversible down to the quantum limit. A first partially transmitting mirror
[to] splits photons into first and second paths. A time delay element [to] introduces a differential
time delay into the second path. And a second partially transmitting mirror [to] mixes the two
paths again to form two outputs. [The] A half-wave plate utilizes two of the beam splitters.